Interoperability and Health Records

Policy and practice, From EU to Portugal

17th Oct 2019 | Hong Kong

Henrique Martins | President of the Board
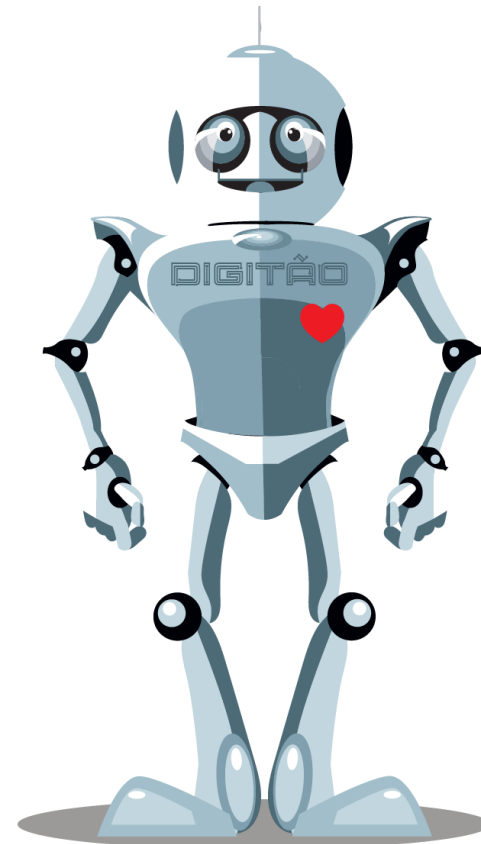Shared Services of Ministry of Health - PT

SPMS EPE
Serviços Partilhados do Ministério da Saúde

24-10-2019

Agenda

1. EU policy on eHealth Interoperability

2. Interoperability in Portugal - examplars

3. Interoperability Enablers

LOST – European Interoperability framework (+Security)

L
Multi-lateral Agreements and Bilateral agréments (e.g. eHDSI Agreement)
Uptake of legal directives such GDPR, NIS eIDAS
eHN Implementation decision

O
New Business Cases and models for Cross-Border Healthcare
Cross Border cooperation amoung MS/C
Guidelines for eHealth Nacional Competences Centers
Definition of Policy Cooperation

S
Promote better semantic interoperability in the EU
Alignment of eHealth standards
Convergence between ways MS/C document clinical processes
Define new strategies for mapping and translate data, such (NLP)…

T
Allow sufficient flexibility to provide structured and coded data from the national and Cross-border infrastructure while, at the same time, enabling the explore of new services.
Evolve national infrastructure and systems
Improve interoperability at Local and National level, that use common standards (HL7 or IHE)

S
Promote CyberSecurity at national and local level
EU guidelines for CyberSecurity
EU Common approach on cybersecurity threads; Protection measures and capacity building
Shared and Integrated prevention, education and awareness

EU eHealth Sustainability and Planning

Two years plan of eHealth Network meetings and sustainability

European Context

Digital Single Market

**eGoverment Plan
2016-2020**

**Multiannual Work Programme
2018-2021**

EC Communication 25.4.2018 on enabling the digital transformation of health and care in the DSM; empowering citizens and building a healthier society

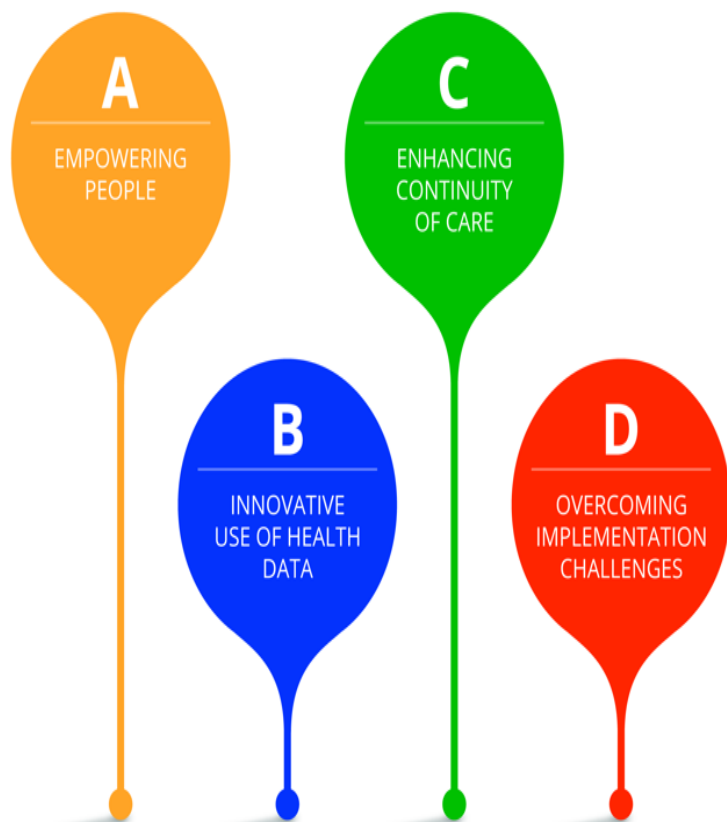**Commission Recommendation of 6.2.2019 on a European Electronic Health Record Exchange format**

Declaration: "Towards access to at least 1 milion sequenced genomes in the european union by 2022"

MULTIANNUAL WORK PROGRAMME (MWP) 2018-2021
MAIN AREAS AND PRIORITIES IDENTIFIED BY THE MEMBER STATES

A. EMPOWERING PEOPLE
- eHealth/ mHealth can be a means for better integrated and personalised health care
- ICT can support patient empowerment through the use of mHealth apps

B. INNOVATIVE USE OF HEALTH DATA
- Large volumes of health data could unlock great potential in the healthcare
- Secondary use of data and big data can provide value for research

C. ENHANCING CONTINUITY OF CARE
- Data supports cross-border healthcare and with that supports the continuity of care and the right of Europeans citizens to choose their own healthcare provider.

D. OVERCOMING IMPLEMENTATION CHALLENGES
- Develop, implement and deploy consistent eHealth enablers based on agreed common frameworks for interoperability, security, competencies and evaluation.

EC Communication

Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee of the regions on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society.

Brussels, 25.4.2018

The Communication contains a package of legislative & non-legislative proposals with the aim of supporting Member States action on eHealth to:

1 Access and Sharing of Eletronic Health Records for citizens

2 Connected health data to advance research, prevention and personalised health and care

3 Digital tools to foster citizen empowerment and person-centred care

eHealth

The right eHealth means access to better health coverage

MORE

www.eHAction.eu

That means...

- Transparency
- Sustainability
- Quality of care
- Quicker and better treatment
- Improvement of medical services

Key Driver - eHN 2019-2020

Joint Action Supporting eHealth Network – eHAction is the expression of the Network's ambition to lead the way on key developments and to support Member States in core topics:

- Empowering People

- Innovative use of Health Data

- Enhancing continuity of care

- Overcoming implementation Challenges

- Integration on National policies and sustainability on eHealth

- The Electronic Health Record Exchange Format (EHRxF) ⭐⭐
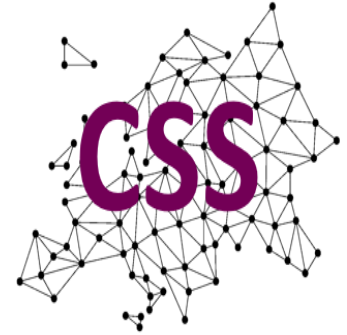
- A Common Semantic Strategy (CSS) ⭐

Common Semantic Strategy for Health in the European Union

- 5 Years ambition

Necessity of a EU Common Semantic Strategy

- Work developed by the CSS working group

- Present a draft proposal, regarding the healthcare domains, to achieve semantic interoperability at the EU level in the coming years.

- Based on the EC Recommendation of the EHRxF - 5 healthcare domains

  - Patient Summary;

  - ePrescription;

  - Laboratory Requests and Results;

  - Medical Imaging and Reports;

  - Hospital Discharge reports

CSS principles to interoperability

- A Common Semantic Strategy

- Should be considered **all** semantic requirements that are relevant for healthcare (eHealth and Health) in the EU to define and drive the strategy

- Common EU semantic view

- The working group discussed and analysed the granularity of the semantic scenario among the MS/C and elaborated a shared view strategy to semantic interoperability in EU for the next years

EU used coding standards

	ICD-10	ICD-O	ICD -X	ATC	SNOMED CT	LOINC	ICF	NPU	Pathology	ICPC-2
Austria										
Croatia										
Cyprus			ICD-9-CM							
Czech Rep.			ICD-TNM							
Denmark										
Estonia										
Finland						FinLOINC				ICPC
Germany			ICD-10-GM			UD				
Hungary						UD				
Ireland			ICD-10-AM 9th ed							
Lithuania			ICD-10-AM							
Netherlands			ICD-10-NL						Linked to SNOMED CT	ICPC-1
Norway										
Poland			ICD-9-PL							
Portugal	*		ICD-9-CM							
Slovenia										
Spain			ICD-X-CM							
Sweden										

CSS workstream

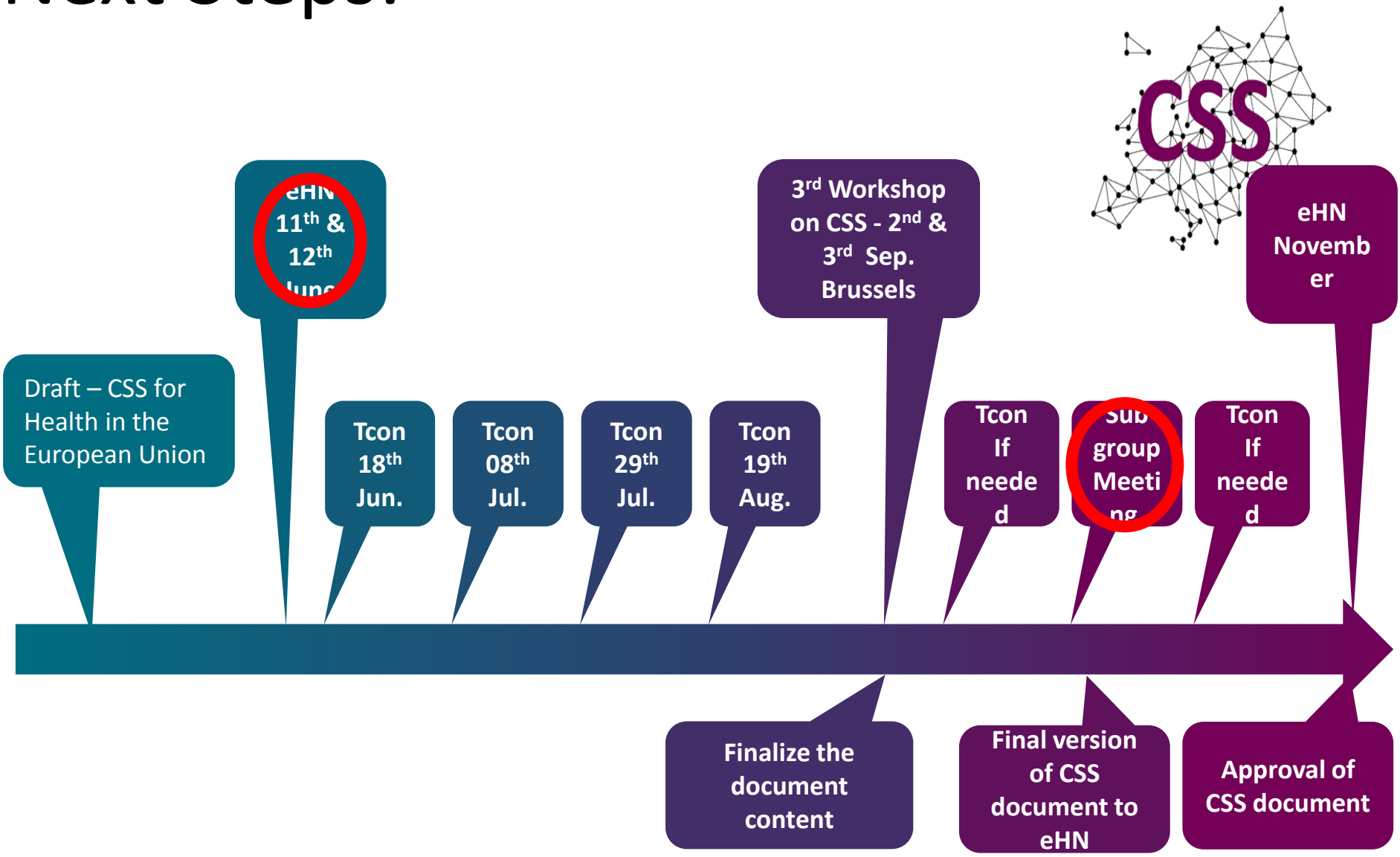| Goal	Description	Objective	Activity
G1	Structuring a common approach on health semantics in the EU	O1.1 Realise a Common Semantic Strategy for Health in the EU	A1.1.1 Propose a 5-year CSS to the eHN
			A1.1.2 Analyse data availability, standards in use and information exchange flows in MS/C.
			A1.1.3 Structure a learning programme to assist capacity building in MS/C
		O1.2 Develop common semantic artefacts for PS, eP, lab requests and results, medical imaging and reports, hospital discharge reports	A1.2.1 Publish common semantic artefacts for the chosen semantic domains
			A1.2.2 Setup common semantic resources: "Common European Healthcare Semantic Server"
		O1.3 Provide guidelines for the standards adoption	A1.3.1 Study the data availability and standards in use in the different MS/C
			A1.3.2 Define a set of common standards for the cross-border exchange of health information
		O1.4 Establish a solid relationship with key bodies of the EU and key technological partners	A1.4.1 Liaison with key partners such as SDOs, technology developers etc. relevant to the CSS
			A1.4.2 Establish a routine exchange format with key bodies of the EU relevant to the CSS
G2	Providing guidance for EU level decisions on health semantics	O2.1 Establish mechanism/ methodology to audit conformance issues at an EU level.	A2.1.1 Propose a mechanism to build capacity in MS/C to foster the use of EU semantic standards for cross-border healthcare
		O2.2 Establish a mechanism to participate in the approval of EU semantic artefacts and projects	A2.2.1 Propose a mechanism to participate in the approval of EU semantic artefacts and projects to the eHN
G3	Ensuring stability and continuity on health semantics in the EU	O3.1 Establish a CSS Committee	A3.1.1 Get a mandate from the eHN
			A3.1.2 Get representatives from each MS/C to join the Committee

CSS workstream
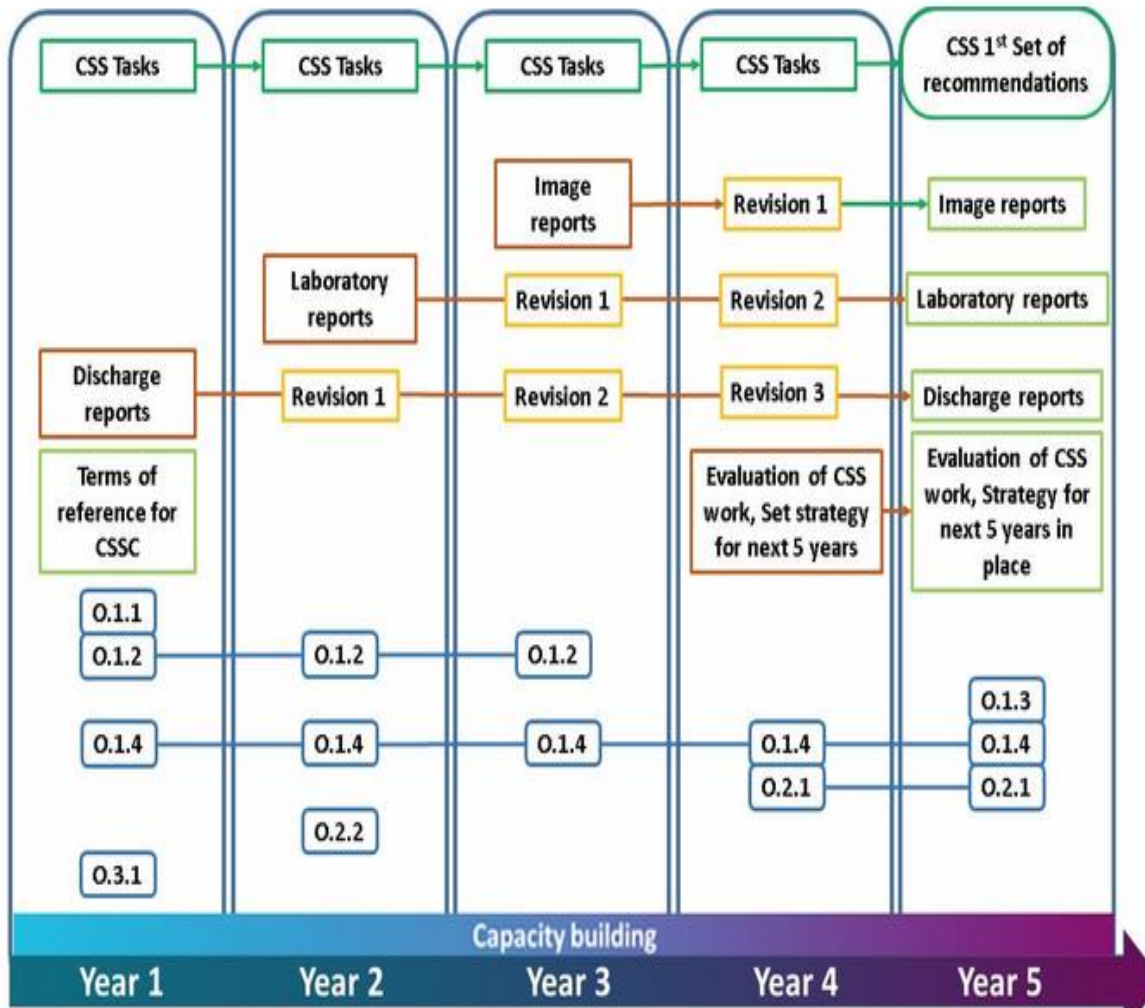
CSS work so far…

- Representatives from 24 MS/C

- 3 workshops done
  - 1st - Lisbon 1-2 Oct. 2018
  - 2nd - Lisbon 18-19 Mar. 2019
  - 3rd - Brussels 2-3 Sep. 2019

- Teleconferences
  - 11 Tcons to elaborate the draft CSS
  - Tcons are continuing on a regular basis and also interaction with eHMSEG STF leader

Next Steps:

Draft – CSS for Health in the European Union

eHN 11th & 12th June

Tcon 18th Jun.

Tcon 08th Jul.

Tcon 29th Jul.

Tcon 19th Aug.

3rd Workshop on CSS - 2nd & 3rd Sep. Brussels

Tcon If needed

Sub group Meeting

Tcon If needed

eHN November

Finalize the document content

Final version of CSS document to eHN

Approval of CSS document

Technical Interoperability

COMUNICATION   COMUNICATION   COMUNICATION

LIGHT
PORTUGAL

PNB
PORTUGAL

NCP
PORTUGAL
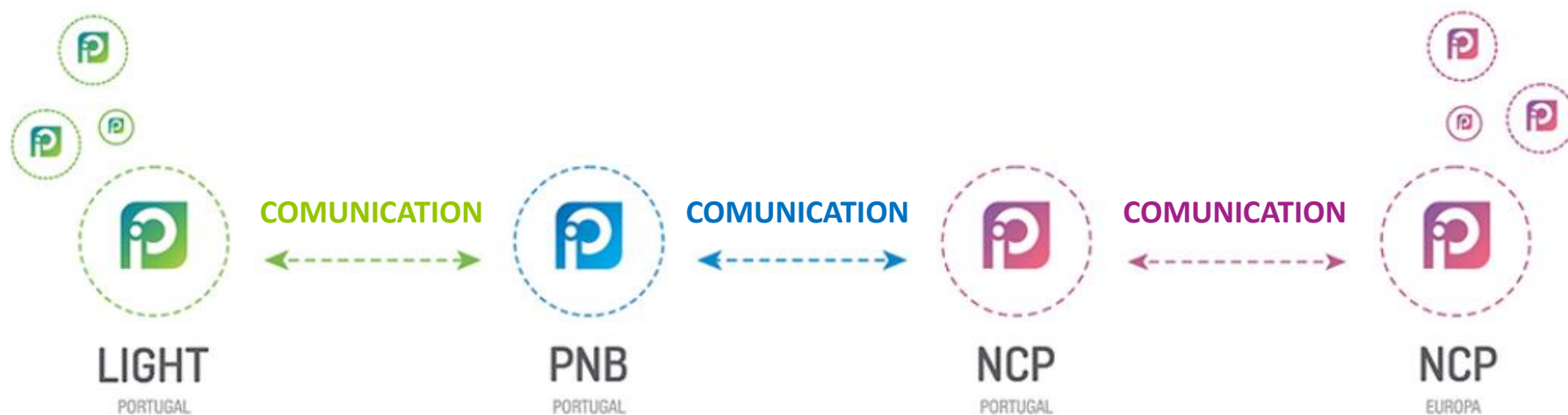
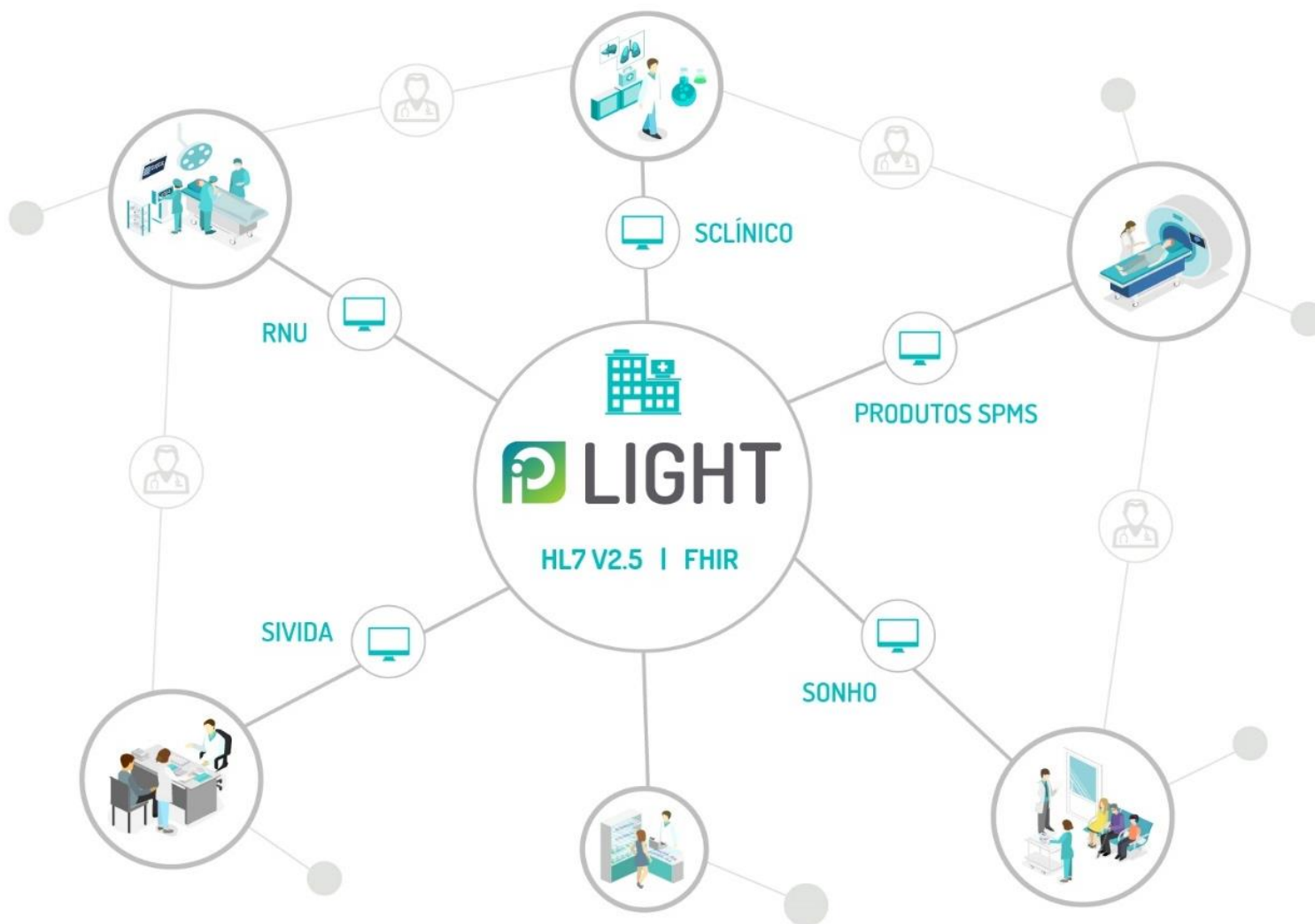NCP
EUROPA

Local Interoperability Gateway for Healthcare (LIGHT)

Local Interoperability Gateway for Healthcare (LIGHT)

- Local Platform;

- Middleware;

- Standardized;

- Comunication is made by HL7 v2.5 messages;

- The communication with Portuguese National Broker (PNB) is made through HL7 FHIR standard;

- Open source platform that addresses 4 layers: Legal, Organisational, Semantic and Technical;

- **Objetives:**
    - To align integration workflows by international standard;
    - To avoid replication of information and reduce errors in records;
    - Focus on the citizen;

LIGHT LOCAL INTEROPERABILITY GATEWAY FOR HEALTHCARE
SPMS INTEROPERABILITY SOLUTIONS

Portugal Continental

Instituições Hospitalares SPMS

Última actualização: 08-05-2018

Administração Regional Saúde

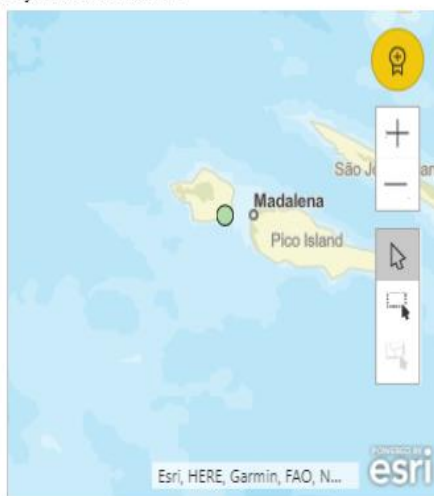| AR LVT	ARS Alente...	ARS Algarve	ARS Centro	ARS Norte	DRS Açores

Versão SONHO

1   2

Eventos Processados com Sucesso

77.418

78.391

98,76%

Percentagem de Ocupação da LIGHt

65.8%
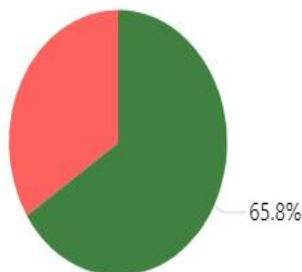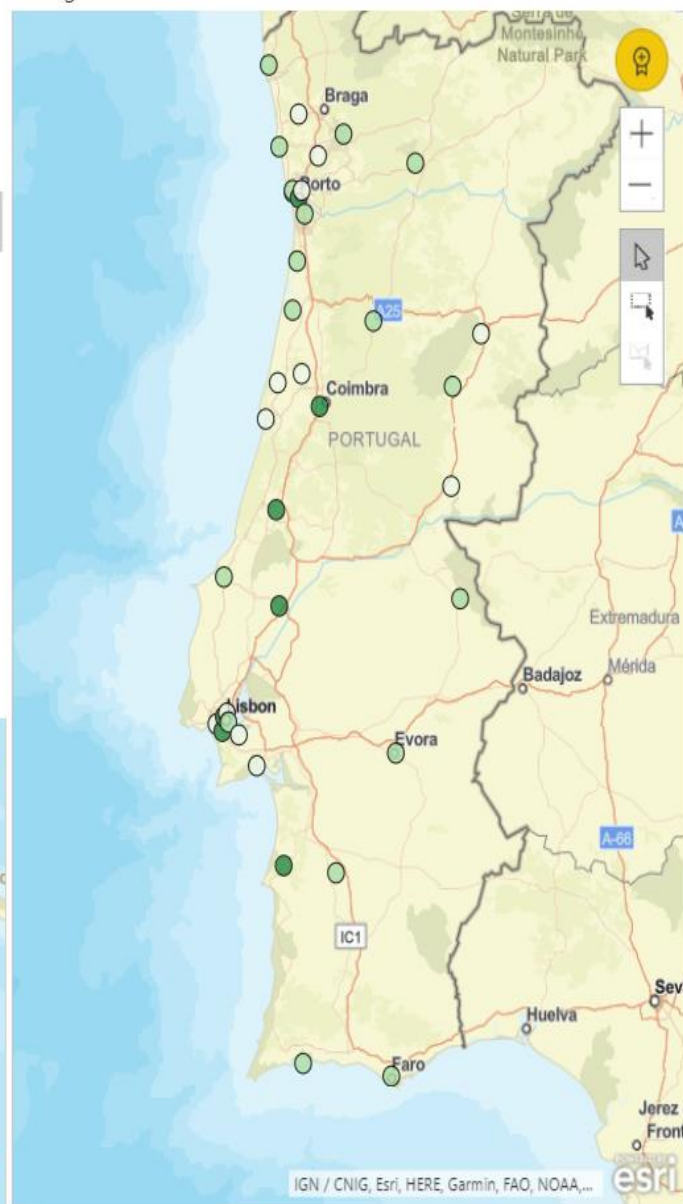
Eventos Processados (Dia Atual)

80 K	
60 K	77.418
40 K	
20 K	
0 K	101 872

Evento com Erro   Evento com Warning   Evento Processado com sucesso

Açores & Madeira

Madalena
São J...and
Pico Island

Esri, HERE, Garmin, FAO, N...
esri

IGN / CNIG, Esri, HERE, Garmin, FAO, NOAA...
esri
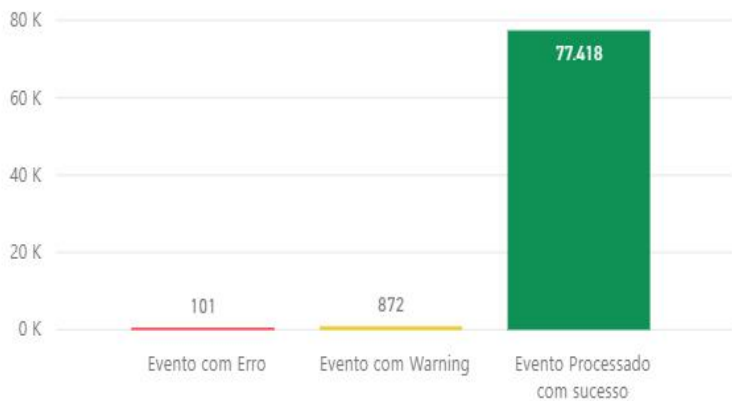
Legenda: ■ SONHOv2 c/ LIGHt   ■ SONHOv1 c/ LIGHt   ■ SONHOv2 s/ LIGHt   ○ SONHOv1 s/ LIGHt

Estado						versão SONHO		Player IN	Player OUT	Operação	Sigla
C	E	HC	HE	HW	W	1	2	Tudo ∨	Tudo ∨	Tudo ∨	Tudo ∨

● C ● E
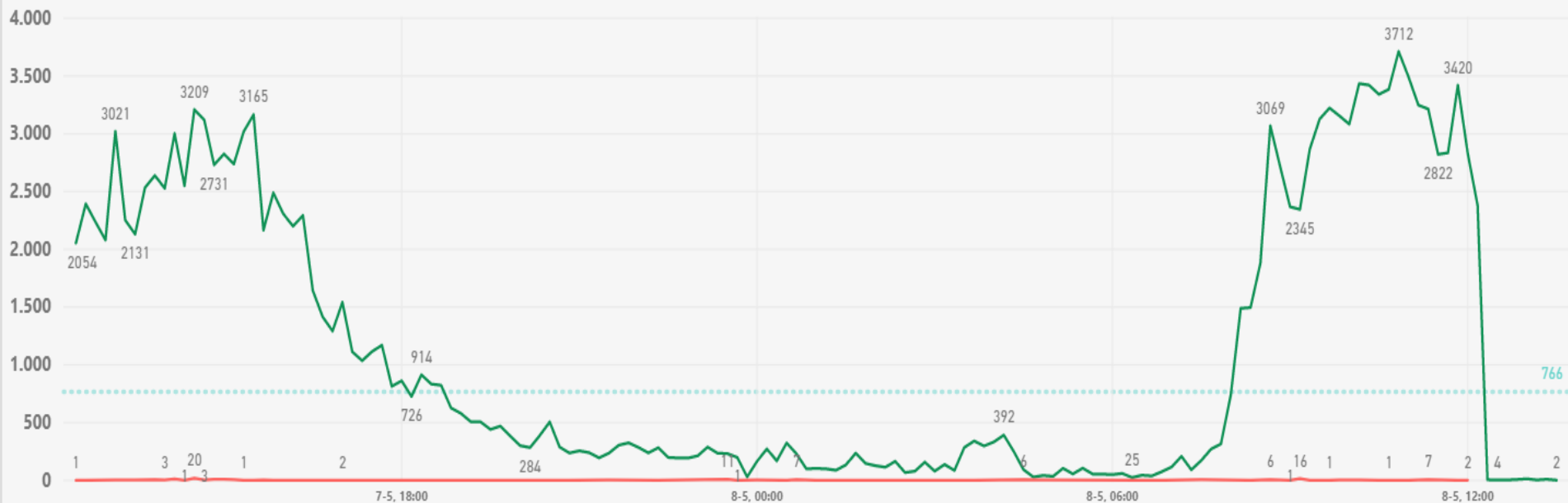
Data Alarme	Data Resolvido	Sigla	ID Alarme	Alarme	Criticidade
08-05-2018 12:11:21		CHL	319	Variação anormal do Número de Eventos	🟡
08-05-2018 12:11:21		CHL	319	Variação anormal do Número de Eventos	🟡
08-05-2018 11:54:15		ULSLA	319	Variação anormal do Número de Eventos	🟡
08-05-2018 11:11:21		CHL	319	Variação anormal do Número de Eventos	🟡
08-05-2018 11:11:21		CHL	319	Variação anormal do Número de Eventos	🟡
08-05-2018 11:09:10		IPOLX	319	Variação anormal do Número de Eventos	🟡
08-05-2018 11:09:09		IPOLX	320	Variação anormal do número de Erros	🟡
08-05-2018 11:03:50		CHUC	319	Variação anormal do Número de Eventos	🟡
08-05-2018 10:31:21		CHL	320	Variação anormal do número de Erros	🟡

Total	25
Contagem	25

Sigla	#Eventos	%Sucessos ▲	#Erros	#Warnings	Data Última Atualização
CHL	21114	93,99%	115	1155	08-05-2018 12:19:00
HSOG	1996	96,39%	18	54	08-05-2018 12:19:00
HGO	38187	99,81%	25	46	08-05-2018 12:19:00
IPOLX	53787	99,86%	57	20	08-05-2018 12:19:00
ULSAM	1799	99,89%	2		08-05-2018 12:17:00
CHPVVC	962	99,90%		1	08-05-2018 12:20:00
ULSNA	1304	99,92%		1	08-05-2018 12:20:00
CHTMAD	2727	99,93%	2		08-05-2018 12:18:00
CHLC	4736	99,94%		3	08-05-2018 12:20:00
ULSM	4012	99,95%		2	08-05-2018 12:17:00
Total		**99,11%**	**220**	**1285**	

Portuguese National Broker (PNB)

PNB PORTUGUESE NATIONAL BROKER
SPMS INTEROPERABILITY SOLUTIONS

- Started to be developed in 2015;

- Used to establish interministerial circuit, via interoperability platform of the Public Administration;

- Open Source;

- Contribute to the promotion of Health Data Interoperability by adopting the best international practices in technical Interoperability standards;

- Improve the maintenance and evolution capacity of national and international integration workflows;

- Used interfaces:

  - PEM – Paperless Prescription   PEM

  - PNB_Vaccines   VACINAS

  - PNB_ACC - Driving license certificate   Certificados Eletrónicos
  Certificado Carta de Condução

PRESCRIPTION AND MEDICATION SYNCHRONIZATION BETWEEN PEM AND INSTITUTIONS

PEM → **HL7 v2.5** → PNB → **Health Care Institutions**

OMP^O09 – Pharmacy/treatment Order Message

APRIL 2018, MEDICATION AND PRESCRIPTION SYNCHRONIZATION

Day	Value
01	12827
02	160106
03	203022
04	201496
05	202826
06	167400
07	16136
08	13959
09	225543
10	230373
11	225334
12	213686
13	161459
14	18066
15	16132
16	237234
17	234570
18	217362
19	184010
20	151992
21	19462
22	15633
23	216257
24	220555
25	17026
26	197738
27	168912
28	16791
29	16643
30	181456
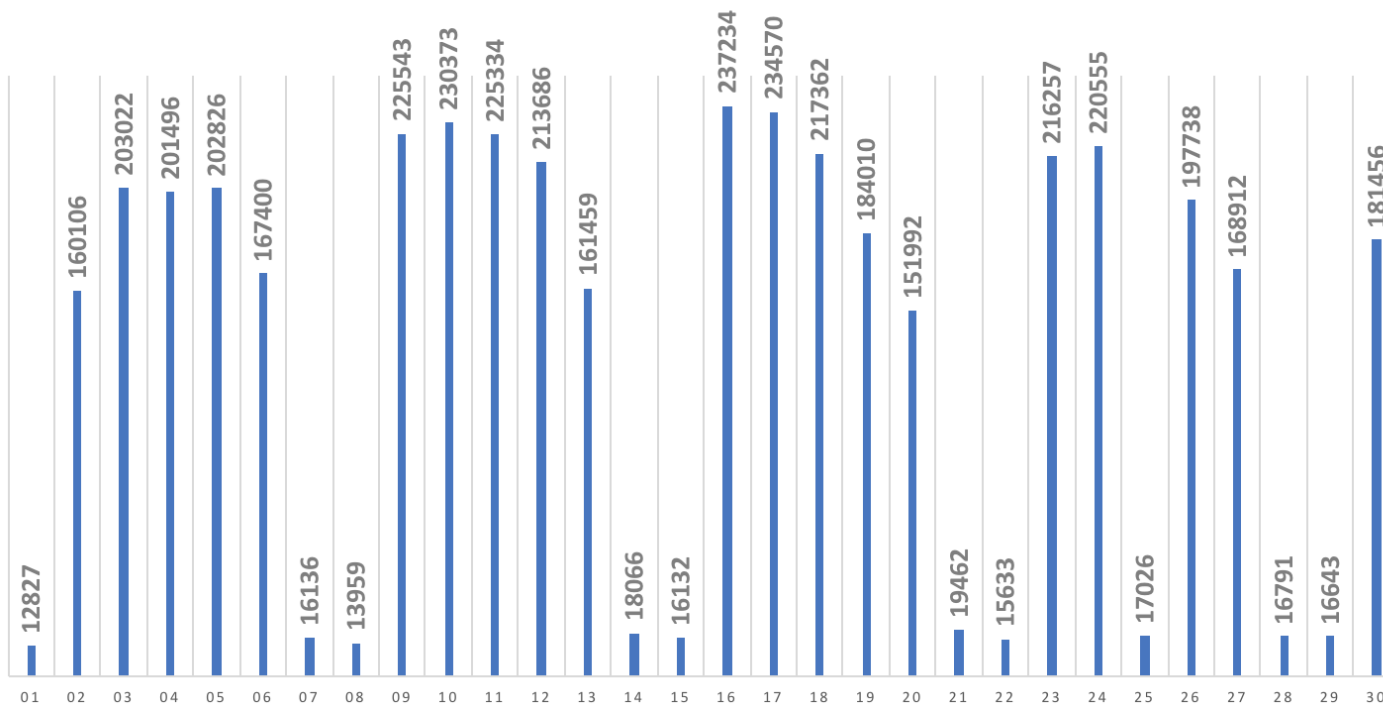
TOTAL IN APRIL

4 164 006

QUERY ALLERGIES
SYNCHRONIZATION BETWEEN PEM AND RCU2

PEM → **HL7 v2.5** → **PNB** → **RCU2**

ZRY^A19 – Patient Query

APRIL 2018, QUERY ALLERGIES

Day	Value
01	21925
02	175111
03	209264
04	204717
05	208596
06	173917
07	29226
08	24793
09	226982
10	230179
11	221219
12	213348
13	169580
14	30271
15	26545
16	240439
17	233275
18	216201
19	189327
20	160698
21	30965
22	28168
23	225893
24	223843
25	28144
26	204783
27	176282
28	29014
29	26743
30	196536
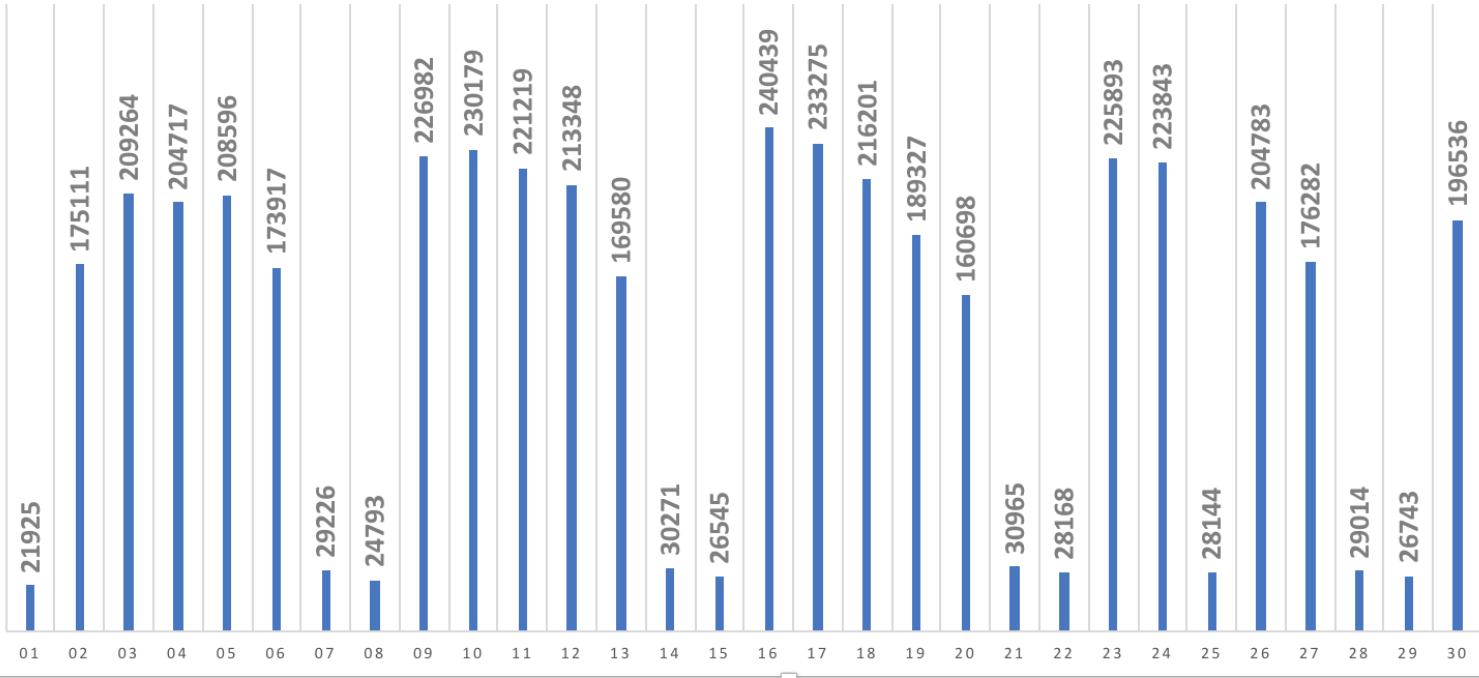
TOTAL IN APRIL

4 375 984

Portuguese National Broker (PNB)_PEM

DAILY STATISTICS

27/04/2018

■ Enviadas ■ Erros

	Enviadas	Erros
PNB-PEM-QRY-MC	176282	3
PNB-PEM-QRY-ALRG	176282	0
PNB-PEM-SYNC-MC	35822	289
PNB-PEM-SYNC-PRESC	97816	147
PNP_PEMP-QRY-MC	1814	0
PNP_PEMP-QRY-ALRG	1814	0
PNB-CCC	6248	1
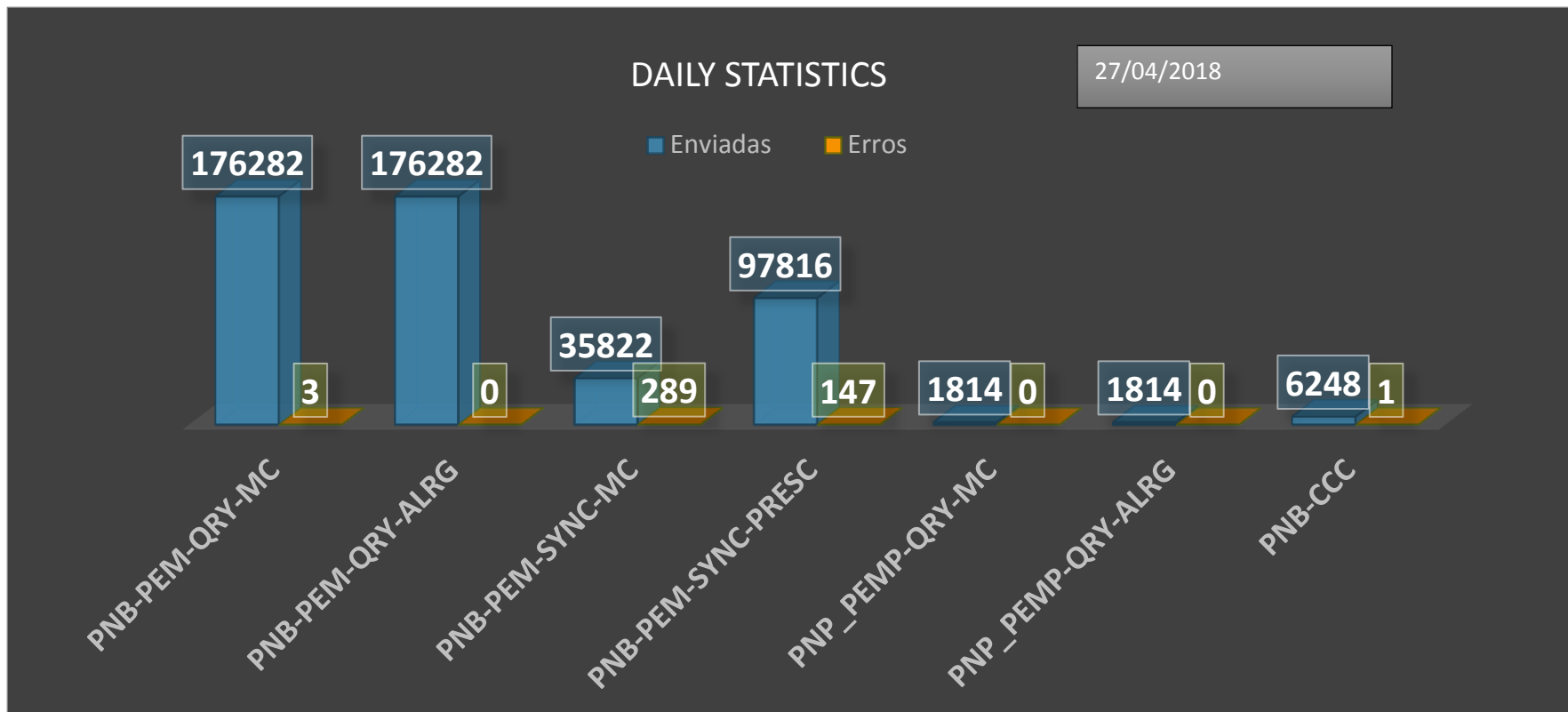
Portuguese National Broker (PNB)_Allergies

Allergies Search

27/04/2018

2874

85494

■ Sem Alergias   ■ Com Alergias
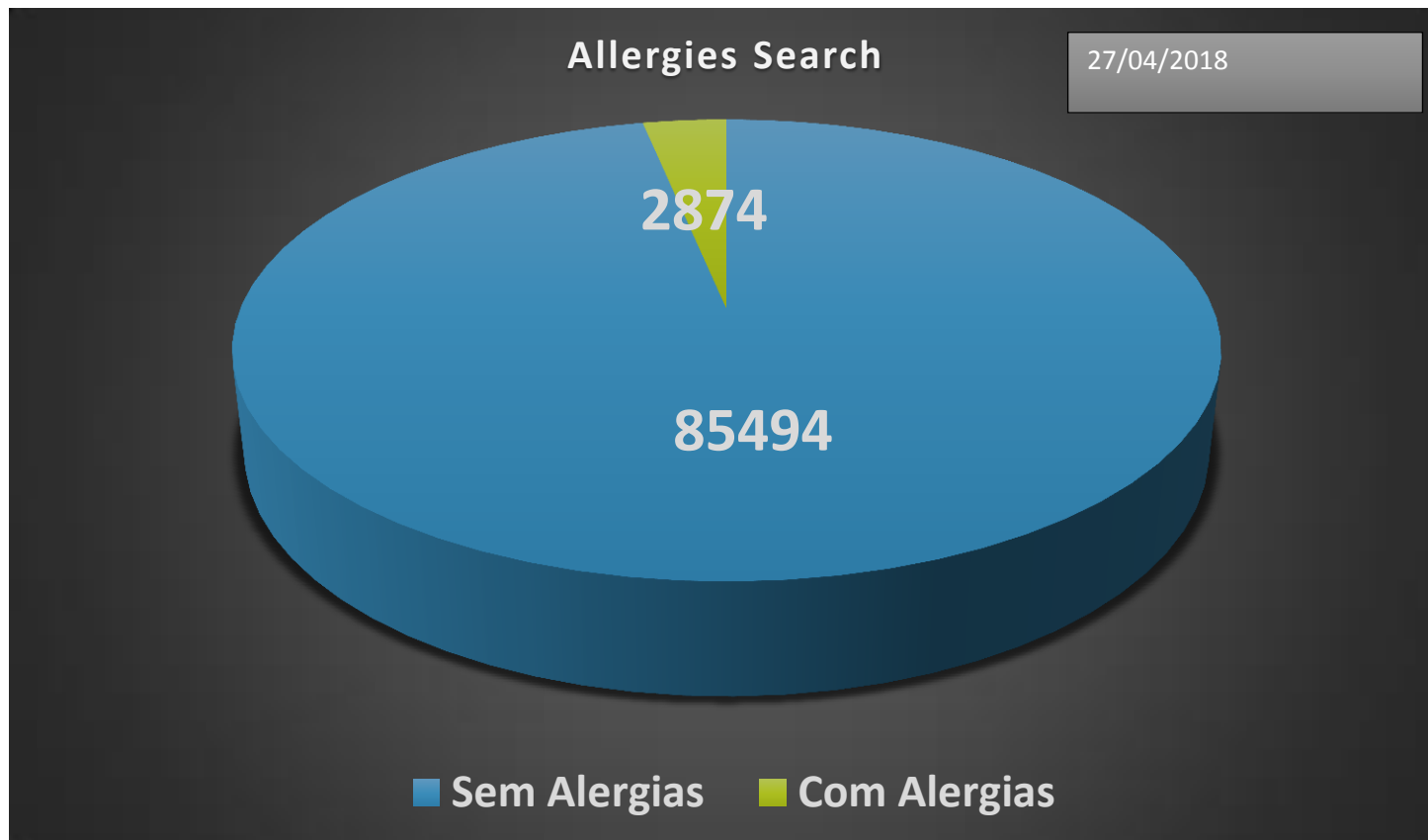
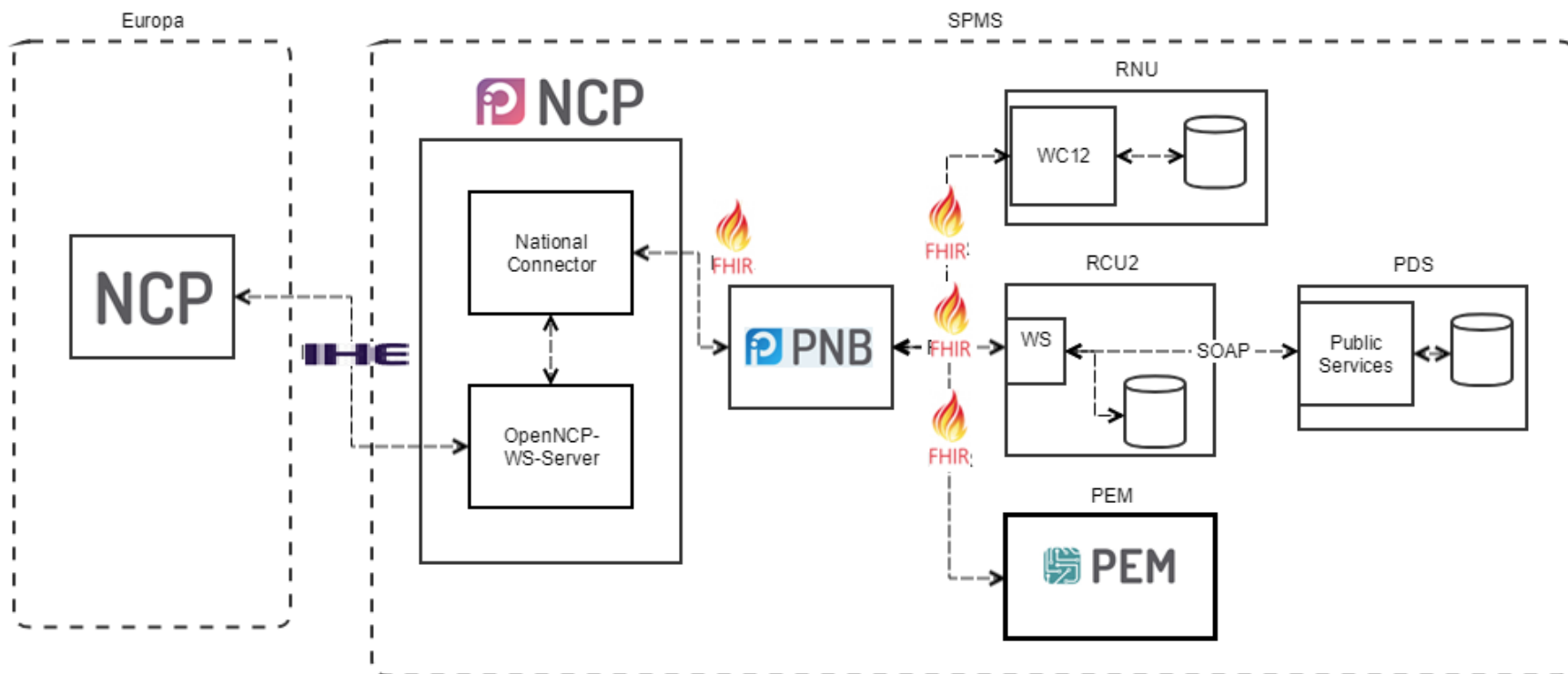# Portuguese National Broker (PNB)_Vaccines

VACINAS

MyNHS Wallet

National Contact Point (NCP)

- To support all communication between the national infrastructure of the Ministry of Health and abroad (other European countries);

- Cross-Border Services:
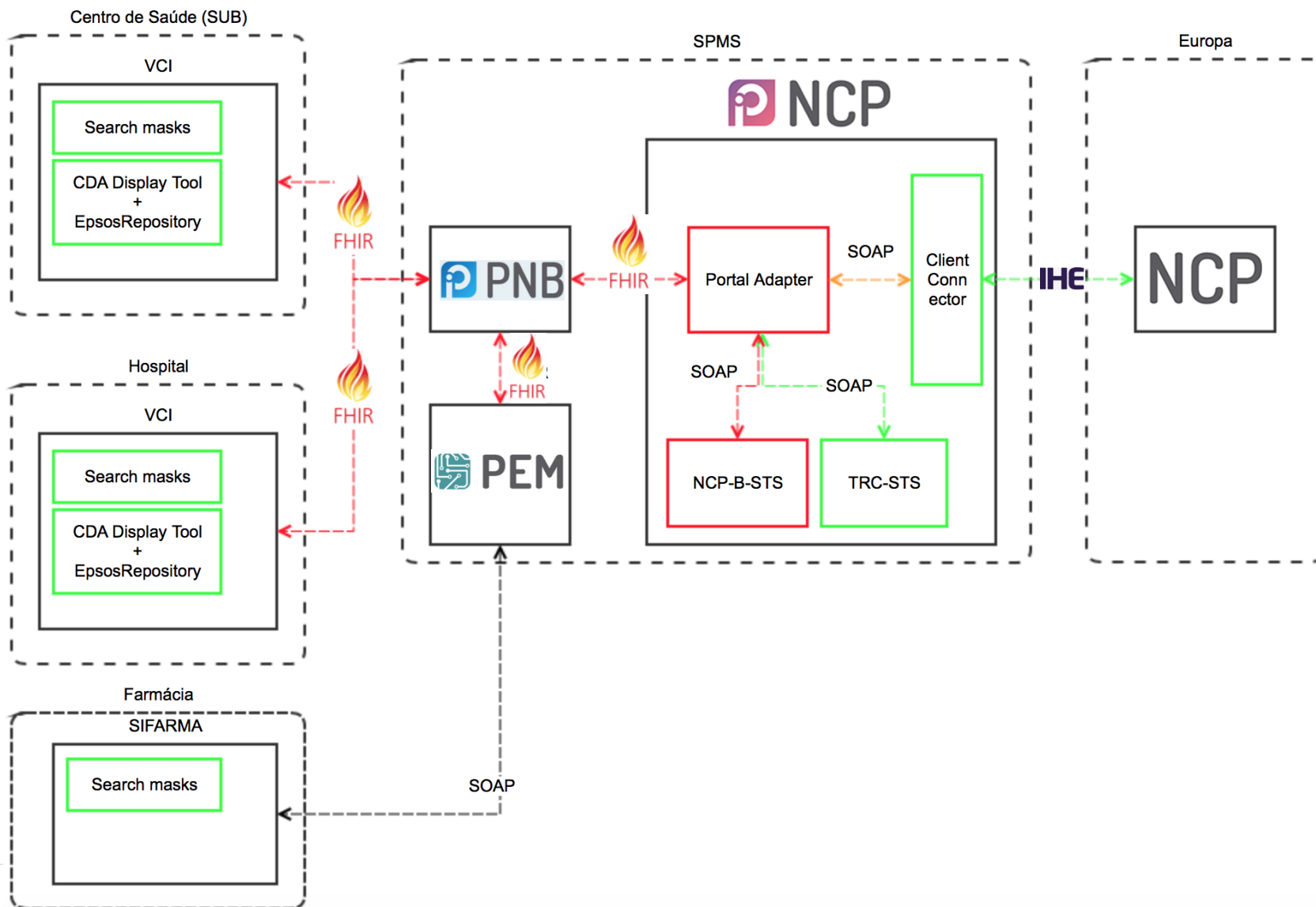 - Patient Summary
  - ePrescription/eDispensation

CROSS BORDER EHEALTH INFORMATION SERVICES ARCHITECTURE USING FHIR STANDARD – COUNTRY B

More Sharing, Better Health!

SPMS EPE
Serviços Partilhados do Ministério da Saúde

24-10-2019